

Physical Characteristics of Stream Subbasins in the Lower Minnesota River Basin South-Central Minnesota

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Abstract

Data that describe the physical characteristics of stream subbasins upstream from selected sites on streams in the Lower Minnesota River Basin, located in south-central Minnesota are presented in this report. The physical characteristics are the drainage area of the subbasin, the percentage area of the subbasin covered only by lakes, the percentage area of the subbasin covered by both lakes and wetlands, the main-channel length, and the main-channel slope. Stream sites include outlets of subbasins of at least 5 square miles, outfalls of sewage treatment plants, and locations of U.S. Geological Survey low-flow, high-flow, and continuous-record gaging stations.

Introduction

This is the 12th report in a series detailing subbasin characteristics of streams in Minnesota and adjacent states. The Lower Minnesota River Basin drains an area of 1,820 square miles and is represented by hydrologic accounting unit 07020012 (U.S. Geological Survey, 1974). The Lower Minnesota River Basin includes parts of Carver, Hennepin, Dakota, Scott, Rice, McLeod, Renville, Sibley, Nicollet, and Le Sueur Counties in south-central Minnesota.

Selected data for sites on streams at outlets of subbasins larger than about 5 square miles; at outfalls of sewage treatment plants; and at locations of U.S. Geological Survey (USGS) low-flow, high-flow, and continuous-record gaging stations located in the Lower Minnesota River Basin are presented in this report.

This report was prepared in cooperation with the Minnesota Department of Transportation.

Acknowledgments

Thomas E. Kujawa, a graduate student at Mankato State University, did much of the digitizing and assisted in the preparation of this report. The Water Resource Center at Mankato State University provided detailed watershed boundaries, which were used for parts of this report. These contributions were essential for the completion of this report.

Methods

U.S. Geological Survey 7-1/2 minute series topographic maps were used as source maps to obtain the areas for the subbasin boundaries, lakes, marshes, the main-channel length, and the contour elevation points used in this report. Paper copies of the maps were used. A geographic information system (GIS) was used to define the geographic location and extent of the subbasins, lakes, marshes, main-channels, and elevation points. Data digitized from paper copies were in error by no more than twice the horizontal accuracy of National Mapping Standards of 40 feet (Thompson, 1987, p. 104). All thematic (digitized) data were projected into an Albers Equal-Area projection for storage and analysis.

Subbasin boundaries were delineated on the basis of anthropogenic activities and topographic contours. Anthropogenic activities, such as the installation of storm sewers, the drainage of wetlands, and the diversion of streams, may alter the drainage area of a stream. Data from field inspections and recent drainage-ditch maps, therefore, were transferred to the topographic maps. The subbasin boundaries were digitized by the Minnesota State Planning Land Management Information Center, Mankato State University, and the U.S. Geological Survey Minnesota using a GIS.

Lake and marsh data were digitized using a GIS. Lake and marsh boundaries were overlaid on the subbasin boundaries to associate each lake and marsh with a subbasin. The total area of lakes and marshes within each subbasin was calculated by the GIS. Total

marsh area plus total lake area is defined as storage area. Lakes and marshes were digitized by the U.S. Geological Survey Minnesota.

Main channels were delineated for each subbasin on the 7-1/2 minute topographic maps starting at the outflow of the subbasin and continuing upstream. Whenever the main channel joined with another stream, the stream upstream of the junction that drained the largest area was selected as the main channel. The main channel, which represents the watercourse that drains the greatest area, is continuous and is defined as a single trace that passes through marshes, lakes, and midline of rivers and braided streams from the basin outlet to an endpoint in the basin, generally at the basin divide. The main channels were digitized by the Minnesota Department of Transportation, using a computer aided drafting system and transferred to the GIS. Stream extensions which represent a portion of the main channel from the end of the mapped stream (blue line on 7-1/2 minute topographic maps) to an endpoint within the basin, generally at the basin divide, were digitized by U.S. Geological Survey Minnesota using a GIS. The main-channel data were overlaid onto the subbasin data to associate each main channel with its subbasin.

Elevation points were digitized at the intersection of topographic contour lines and main channels. The elevation data were digitized using a GIS. The elevation data was overlaid onto the main channel data to associate each elevation data point with a main channel. Two points on the main channel, at 10 percent and at 85 percent of the main channel length from the basin outlet to the drainage divide, were located by the GIS. The elevations of these two points were interpolated from the digitized elevation data. Main-channel slope was calculated by dividing the difference in elevation between these points by the distance along the stream channel between these points.

Physical Characteristics of Lower Minnesota River Subbasins

Physical characteristics determined for each of the subbasins shown on plate 1 are presented in table 1. Subbasins are presented in order from headwaters to mouth. The rank of the subbasin stream is shown by indentation; whenever two subbasin streams joined, the stream draining the least cumulative area was assigned a lower rank and indented in the table.

The data for drainage area, and main-channel length, are reported using three significant figures or rounded to the nearest one-hundredth of a unit. The data for lake area and storage area are reported using two significant

figures or rounded to the nearest one-tenth of a percent. The data for main-channel slope is reported to the nearest one-tenth of a foot per mile.

The following is an explanation of the terms used in table 1:

Subbasin number. A seven digit number based on the Minnesota Common Stream and Watershed Numbering System (Minnesota Department of Natural Resources, 1981). The first two digits are 33 and identify the Lower Minnesota River Basin. The following five digits are arbitrary and are used to identify each individual subbasin.

Stream name. The name of the stream or ditch shown on 7-1/2 minute topographic maps. The relative position of the subbasin above other subbasins, streams, gaging stations, and outfalls from sewage treatment plants also is given.

Outlet location. The U.S. Public Lands Survey System is used to describe the location where the stream exits the subbasin, down to quarter-quarter section. The description includes quarter-quarter section, section, township, and range.

Drainage area. That area, measured on a horizontal plane, enclosed by a topographic divide, within which direct surface runoff from precipitation normally flows by gravity into a watercourse above a specific point. This may include closed basins and other areas that do not contribute directly to surface runoff.

Lake area. The percentage of the drainage area covered by open water as shown on 7-1/2 minute topographic maps.

Storage area. The percentage of a drainage area covered by open water and marshes as shown on 7-1/2 minute topographic maps. Marsh areas are not shown on plate 1.

Main-channel length. The total length of the main channel from the basin outlet to a point within the basin (generally at the basin divide) representing the watercourse that drains the greatest area.

Main-channel slope. The average slope of the watercourse between the points at 10 and at 85 percent of the distance along the main channel from the basin outlet to the drainage divide.

Stream extension. A representation of the main channel from the end of the mapped stream line (blue line on 7-1/2 minute topographic maps) to an endpoint within the basin, generally at the basin divide. This is done by interpreting topographic relief so that the extension of the main channel represents the watercourse draining the greatest area.

References Cited

Minnesota Department of Natural Resources, 1981, The Common Stream and Watershed Numbering System: Minnesota Department of Natural Resources Stream Inventory and Data Retrieval Systems Report 7002, unpagged.

Thompson, M.M., 1987, Maps for America, 3d edition: U.S. Geological Survey, 265 p.

U.S. Geological Survey, 1974, Hydrologic unit map-- 1974 State of Minnesota: 1 plate, scale 1:500,000.

Table 1.—Physical characteristic data for the Lower Minnesota River Basin.

[All cities and towns are in Minnesota; --, not determined]

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Town-ship	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)

First Rank

Second Rank

Third Rank

Fourth Rank

Fifth Rank

2803800	Minnesota River above Cherry Creek	NW ¹ / ₄ SE ¹ / ₄	33	111N	26W	15,100	2.5	5.0	15,100	2.5	5.0	350	1.3
3304300	Unnamed tributary to Minnesota River above mouth	SW ¹ / ₄ SE ¹ / ₄	15	111N	26W	6.32	0.0	0.4	6.32	0.0	0.4	7.03	30.9
3304500	Minnesota River above Barney Fry Creek	NE ¹ / ₄ SE ¹ / ₄	10	111N	26W	8.66	0.7	3.5	15,100	2.5	5.0	356	1.3
3309900	County Ditch No. 47A to Barney Fry Creek above mouth	SW ¹ / ₄ NW ¹ / ₄	24	111N	27W	11.8	1.2	6.7	11.8	1.2	6.7	7.33	3.1
3310000	County Ditch No. 75 to Barney Fry Creek above mouth	SW ¹ / ₄ NW ¹ / ₄	24	111N	27W	7.10	0.8	2.6	7.10	0.8	2.6	6.40	11.8
3310100	Barney Fry Creek to Minnesota River above mouth	NE ¹ / ₄ SE ¹ / ₄	10	111N	26W	15.0	0.0	0.0	33.9	0.6	2.9	13.8	18.7
3304401	Minnesota River above gaging station at Le Sueur: no station number assigned	NW ¹ / ₄ SE ¹ / ₄	35	112N	26W	10.3	0.1	3.4	15,200	2.5	5.0	359	1.3
3304400	Minnesota River above Le Sueur Creek	SW ¹ / ₄ NW ¹ / ₄	25	112N	26W	4.39	0.2	0.3	15,200	2.5	5.0	362	1.3
3304101	County Ditch No. 5 above outfall from sewage treatment plant for Le Center	NW ¹ / ₄ SE ¹ / ₄	32	111N	24W	0.47	0.0	0.0	0.47	0.0	0.0	1.01	28.8
3304100	County Ditch No. 51 to Le Sueur Creek above mouth	NW ¹ / ₄ NE ¹ / ₄	26	111N	25W	8.08	0.5	3.1	8.55	0.5	2.9	7.68	12.3
3304200	Unnamed tributary to Le Sueur Creek above mouth	SW ¹ / ₄ NE ¹ / ₄	29	111N	25W	13.8	1.1	3.3	13.8	1.1	3.3	9.28	15.0
3304001	Le Sueur Creek above gaging station near Ottawa: no station number assigned	SW ¹ / ₄ SW ¹ / ₄	20	111N	25W	33.1	1.8	6.5	55.5	1.4	5.2	24.4	6.6
3304000	Le Sueur Creek above unnamed tributary (subbasin 3302500)	SW ¹ / ₄ NE ¹ / ₄	19	111N	25W	0.31	0.0	0.0	55.8	1.4	5.2	25.4	6.8
3302500	Unnamed tributary to Le Sueur Creek above mouth	SW ¹ / ₄ NE ¹ / ₄	19	111N	25W	5.87	2.4	19.9	5.87	2.4	19.9	7.03	18.8

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Town-ship	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)
3303900	County Ditch No. 42 to Forest Prairie Creek above mouth	NE $\frac{1}{4}$ SE $\frac{1}{4}$	03	111N	24W	6.49	0.1	13.3	6.49	0.1	13.3	4.78	5.3
3303800	Forest Prairie Creek above subbasin 3303000	SE $\frac{1}{4}$ SW $\frac{1}{4}$	11	112N	25W	26.2	2.4	10.9	32.6	2.0	11.4	16.0	4.6
3303000	Forest Prairie Creek above County Ditch No. 34	SW $\frac{1}{4}$ NW $\frac{1}{4}$	23	112N	25W	9.50	0.0	1.3	42.2	1.5	9.1	18.2	5.2
3303700	County Ditch No. 53 to County Ditch No. 34 above mouth	NE $\frac{1}{4}$ SE $\frac{1}{4}$	35	112N	25W	8.90	0.0	3.1	8.90	0.0	3.1	6.78	8.1
3303600	County Ditch No. 34 to Forest Prairie Creek above mouth	SW $\frac{1}{4}$ NW $\frac{1}{4}$	23	112N	25W	7.44	2.5	4.2	16.3	1.2	3.6	10.2	7.5
3303500	Unnamed tributary to Forest Prairie Creek above mouth	SW $\frac{1}{4}$ NE $\frac{1}{4}$	28	112N	25W	6.34	0.0	1.1	6.34	0.0	1.1	5.12	25.7
3304600	Forest Prairie Creek to Le Sueur Creek above mouth	NE $\frac{1}{4}$ NE $\frac{1}{4}$	36	112N	26W	6.35	0.0	0.7	71.2	1.2	6.4	26.8	10.6
3303300	Le Sueur Creek to Minnesota River above mouth	SW $\frac{1}{4}$ NW $\frac{1}{4}$	25	112N	26W	17.9	0.0	1.4	151	1.2	5.9	33.4	10.0
3301100	Judicial Ditch No. 18 above subbasin 3301200	SW $\frac{1}{4}$ SW $\frac{1}{4}$	34	114N	29W	16.0	1.5	1.9	16.0	1.5	1.9	12.0	3.2
3301200	Judicial Ditch No. 18 to Titlow Lake	SE $\frac{1}{4}$ SE $\frac{1}{4}$	20	113N	28W	16.6	0.0	0.1	32.6	0.7	1.0	19.8	3.1
3305900	County Ditch No. 18 to Titlow Lake	NE $\frac{1}{4}$ NW $\frac{1}{4}$	29	113N	28W	17.9	2.0	3.3	17.9	2.0	3.3	14.8	3.5
3307400	County Ditch No. 61 at Altnow Lake outlet	NW $\frac{1}{4}$ SW $\frac{1}{4}$	14	113N	28W	7.86	1.8	8.1	7.86	1.8	8.1	8.03	4.1
3307300	North Branch Rush River (County Ditch No. 55) above unnamed tributary (subbasin 3306200)	NW $\frac{1}{4}$ NW $\frac{1}{4}$	02	112N	28W	11.9	12.2	13.5	70.2	3.1	4.5	25.3	3.0
3306100	County Ditch No. 56 to unnamed tributary (subbasin 3306201) above mouth	SE $\frac{1}{4}$ NW $\frac{1}{4}$	02	112N	29W	6.98	0.0	0.0	6.98	0.0	0.0	5.21	2.9
3306201	Mud Lake outlet	SE $\frac{1}{4}$ SW $\frac{1}{4}$	33	113N	28W	9.41	1.0	1.7	16.4	0.6	1.0	10.4	3.8

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

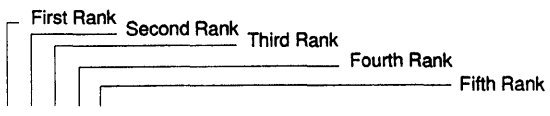
Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)
													
3306200	Unnamed tributary to North Branch Rush River (County Ditch No. 55) above mouth	NW $\frac{1}{4}$ NW $\frac{1}{4}$	02	112N	28W	3.82	0.0	0.4	20.2	0.5	0.8	12.6	4.1
3307101	North Branch Rush River (County Ditch No. 55) above gaging station near New Rome: no station number assigned	NW $\frac{1}{4}$ NW $\frac{1}{4}$	16	112N	27W	8.60	0.0	0.3	99.0	2.3	3.4	31.3	3.0
3307100	North Branch Rush River (County Ditch No. 58) to Rush River above mouth	NW $\frac{1}{4}$ SE $\frac{1}{4}$	16	112N	27W	0.64	0.0	0.0	99.7	2.3	3.3	32.4	3.0
3304700	County Ditch No. 49 to County Ditch No. 22 above mouth	SE $\frac{1}{4}$ NW $\frac{1}{4}$	27	113N	31W	7.39	0.0	0.1	7.39	0.0	0.1	6.21	4.4
3304800	County Ditch No. 22 to County Ditch No. 11 above mouth	NW $\frac{1}{4}$ NE $\frac{1}{4}$	36	113N	31W	9.43	0.0	0.2	16.8	0.0	0.1	8.80	3.9
3304900	County Ditch No. 11 above County Ditch No. 22	NW $\frac{1}{4}$ NE $\frac{1}{4}$	36	113N	31W	6.44	0.0	0.1	6.44	0.0	0.1	6.71	3.0
3305200	Unnamed tributary to Middle Branch Rush River above mouth	SW $\frac{1}{4}$ NE $\frac{1}{4}$	31	113N	30W	3.88	0.0	2.6	3.88	0.0	2.6	5.54	3.4
3305000	County Ditch No. 44 to Middle Branch Rush River above mouth	SE $\frac{1}{4}$ SE $\frac{1}{4}$	04	112N	30W	7.52	0.0	0.2	7.52	0.0	0.2	8.27	5.3
3305100	Middle Branch Rush River above County Ditch No. 42	SE $\frac{1}{4}$ SW $\frac{1}{4}$	07	112N	29W	10.7	0.0	0.0	45.4	0.0	0.3	17.9	3.5
3305800	County Ditch No. 42 above subbasin 3306001	NW $\frac{1}{4}$ NE $\frac{1}{4}$	36	113N	30W	4.11	0.0	0.0	4.11	0.0	0.0	4.52	3.9
3306001	County Ditch No. 42 above outfall from sewage treatment plant for Winthrop	SW $\frac{1}{4}$ NE $\frac{1}{4}$	06	112N	29W	6.66	0.0	0.0	10.8	0.0	0.0	6.82	4.8
3306000	County Ditch No. 42 to Middle Branch Rush River above mouth	SE $\frac{1}{4}$ SW $\frac{1}{4}$	07	112N	29W	3.58	0.0	0.0	14.4	0.0	0.0	9.14	4.3

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

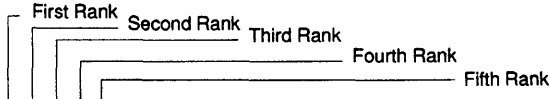
Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)
													
3306301	Middle Branch Rush River (County Ditch No. 54) above gaging station near Gaylord: station number is 05326100	SW $\frac{1}{4}$ NW $\frac{1}{4}$	18	112N	28W	7.58	0.0	0.5	67.3	0.0	0.3	24.9	3.5
3306300	Middle Branch Rush River (County Ditch No. 54) above County Ditch No. 43	SW $\frac{1}{4}$ NE $\frac{1}{4}$	21	112N	28W	4.57	0.0	0.1	71.8	0.0	0.3	28.2	3.6
3307000	County Ditch No. 43 to Middle Branch Rush River (County Ditch No. 54) above mouth	SW $\frac{1}{4}$ NE $\frac{1}{4}$	21	112N	28W	5.60	0.0	0.0	5.60	0.0	0.0	4.92	4.3
3306900	Middle Branch Rush River (County Ditch No. 54) to Rush River above mouth	NW $\frac{1}{4}$ SE $\frac{1}{4}$	16	112N	27W	9.56	0.0	0.4	87.0	0.0	0.3	36.2	3.4
3307200	County Ditch No. 50 to Rush River above mouth	NW $\frac{1}{4}$ NW $\frac{1}{4}$	13	112N	27W	10.7	0.0	0.0	10.7	0.0	0.0	8.51	6.4
3309500	Rush River above South Branch Rush River	NW $\frac{1}{4}$ SW $\frac{1}{4}$	17	112N	26W	8.88	0.1	0.3	206	1.1	1.7	43.5	4.3
3305400	Judicial Ditch No. 1 (County Ditch No. 4A) above County Ditch No. 13	SE $\frac{1}{4}$ SE $\frac{1}{4}$	27	112N	30W	18.4	5.0	6.1	18.4	5.0	6.1	9.15	2.9
3305301	Unnamed tributary above outfall from sewage treatment plant for Gibbon	NE $\frac{1}{4}$ NW $\frac{1}{4}$	12	112N	31W	1.57	0.0	0.0	1.57	0.0	0.0	2.15	5.9
3305300	County Ditch No. 13 to Judicial Ditch No. 1 above mouth	SE $\frac{1}{4}$ SE $\frac{1}{4}$	27	112N	30W	9.41	0.0	0.2	11.0	0.0	0.1	9.88	3.3
3305500	Judicial Ditch No. 6 (Judicial Ditch No. 1) to South Branch Rush River above mouth	SE $\frac{1}{4}$ NW $\frac{1}{4}$	35	112N	29W	19.7	0.0	0.7	49.0	1.9	2.6	18.4	2.9
3305600	South Branch Rush River above Judicial Ditch No. 6 (Judicial Ditch No. 1)	SE $\frac{1}{4}$ NW $\frac{1}{4}$	35	112N	29W	17.2	1.0	1.3	17.2	1.0	1.3	12.6	3.2
3306700	Outlet creek from Rice Lake to South Branch Rush River above mouth	NE $\frac{1}{4}$ SW $\frac{1}{4}$	35	112N	28W	5.79	3.2	4.4	5.79	3.2	4.4	6.01	2.0

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)
	<div> <div>First Rank</div> <div>Second Rank</div> <div>Third Rank</div> <div>Fourth Rank</div> <div>Fifth Rank</div> </div>												
3306500	South Branch Rush River above Judicial Ditch No. 1A	NE $\frac{1}{4}$ NW $\frac{1}{4}$	05	111N	27W	13.1	0.3	5.8	85.1	1.6	3.0	29.8	2.3
3306401	Unnamed tributary above outfall from sewage treatment plant for Lafayette	NW $\frac{1}{4}$ NE $\frac{1}{4}$	12	111N	30W	0.68	0.0	0.1	0.68	0.0	0.1	1.30	12.8
3306400	County Ditch No. 40A to Judicial Ditch No. 1A above mouth	SW $\frac{1}{4}$ SW $\frac{1}{4}$	24	111N	29W	15.7	0.0	0.2	16.4	0.0	0.2	11.3	4.3
3308500	County Ditch No. 32A to Judicial Ditch No. 1A above mouth	SW $\frac{1}{4}$ SW $\frac{1}{4}$	24	111N	29W	14.4	0.0	1.2	14.4	0.0	1.2	7.91	8.0
3308600	County Ditch No. 30A to Judicial Ditch No. 1A above mouth	NW $\frac{1}{4}$ SE $\frac{1}{4}$	24	111N	29W	15.1	0.0	0.7	15.1	0.0	0.7	9.35	2.4
3306801	Judicial Ditch No. 1A above gaging station near New Sweden: station number is 05326200	NW $\frac{1}{4}$ NW $\frac{1}{4}$	19	111N	28W	0.81	0.0	0.0	46.6	0.0	0.7	12.7	3.9
3306600	County Ditch No. 9 to Judicial Ditch No. 1A above mouth	SW $\frac{1}{4}$ SW $\frac{1}{4}$	18	111N	28W	6.87	0.0	1.8	6.87	0.0	1.8	5.75	2.7
3306800	Judicial Ditch No. 1A to South Branch Rush River above mouth	NE $\frac{1}{4}$ NW $\frac{1}{4}$	05	111N	27W	23.3	0.1	0.6	76.8	0.0	0.7	22.2	2.7
3309700	South Branch Rush River to Rush River above mouth	NW $\frac{1}{4}$ SW $\frac{1}{4}$	17	112N	26W	22.4	0.0	0.8	184	0.7	1.8	42.2	3.9
3309601	Rush River above gaging station near Henderson: station number is 05326400	NW $\frac{1}{4}$ NW $\frac{1}{4}$	24	112N	26W	12.2	0.0	0.4	403	0.9	1.7	50.7	6.3
3309600	Rush River to Minnesota River above mouth	SW $\frac{1}{4}$ SE $\frac{1}{4}$	13	112N	26W	0.24	0.0	3.2	403	0.9	1.7	51.5	6.3
3303100	Unnamed tributary (Judicial Ditch No. 2) to Minnesota River above mouth	SW $\frac{1}{4}$ NW $\frac{1}{4}$	07	112N	25W	14.5	1.5	3.7	14.5	1.5	3.7	11.1	20.4

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)

6

First Rank Second Rank Third Rank Fourth Rank Fifth Rank

3303201	Minnesota River above outfall from sewage treatment plant for Henderson	SE $\frac{1}{4}$ NE $\frac{1}{4}$	02	112N	26W	7.42	1.8	2.1	15,800	2.5	4.9	368	1.2
3303200	Minnesota River above High Island Creek	NE $\frac{1}{4}$ NW $\frac{1}{4}$	24	113N	26W	10.8	0.6	5.6	15,800	2.5	4.9	374	1.2
3301500	Judicial Ditch No. 11 above subbasin 3301300	NW $\frac{1}{4}$ NW $\frac{1}{4}$	18	114N	31W	15.2	0.0	0.1	15.2	0.0	0.1	11.7	2.6
3301300	Judicial Ditch No. 11 above unnamed tributary (subbasin 3301400)	SE $\frac{1}{4}$ SE $\frac{1}{4}$	18	114N	31W	4.25	0.0	0.1	19.5	0.0	0.1	13.0	2.5
3301400	Unnamed tributary to Judicial Ditch No. 11 above mouth	SE $\frac{1}{4}$ SE $\frac{1}{4}$	18	114N	31W	8.67	0.0	0.4	8.67	0.0	0.4	8.15	4.3
3301600	Unnamed tributary to Judicial Ditch No. 11 above mouth	NW $\frac{1}{4}$ SE $\frac{1}{4}$	20	114N	31W	7.50	0.0	0.3	7.50	0.0	0.3	6.44	5.7
3300600	Judicial Ditch No. 24 above subbasin 3300700	NE $\frac{1}{4}$ SE $\frac{1}{4}$	19	114N	30W	11.7	3.8	4.3	11.7	3.8	4.3	7.92	3.3
3300700	Judicial Ditch No. 11 to High Island Creek (Judicial Ditch No. 24) above mouth	NW $\frac{1}{4}$ SW $\frac{1}{4}$	20	114N	30W	13.2	0.0	0.2	60.5	0.7	1.0	21.0	2.2
3300800	Judicial Ditch No. 15 (County Ditch No. 31) to High Island Creek (Judicial Ditch No. 24) above mouth	NW $\frac{1}{4}$ SW $\frac{1}{4}$	20	114N	30W	17.2	0.0	0.3	17.2	0.0	0.3	11.8	2.8
3300500	County Ditch No. 39 to High Island Creek (Judicial Ditch No. 24) above mouth	NW $\frac{1}{4}$ NE $\frac{1}{4}$	23	114N	30W	10.5	0.0	0.0	10.5	0.0	0.0	8.56	3.6
3301000	High Island Creek (Judicial Ditch No. 24) above Bakers Lake	NE $\frac{1}{4}$ NW $\frac{1}{4}$	20	114N	29W	5.95	0.0	1.7	94.1	0.5	0.8	28.3	2.3
3300900	Unnamed tributary to Bakers Lake	SE $\frac{1}{4}$ SE $\frac{1}{4}$	20	114N	29W	8.37	0.1	2.4	8.37	0.1	2.4	10.0	2.7
3300400	Bakers Lake outlet	SE $\frac{1}{4}$ NE $\frac{1}{4}$	20	114N	29W	7.19	7.4	12.4	110	0.9	1.7	29.2	2.3
3300300	High Island Creek (Judicial Ditch No. 24) above High Island Lake outlet	NW $\frac{1}{4}$ NW $\frac{1}{4}$	33	114N	28W	20.3	2.3	4.9	130	1.1	2.2	38.8	2.2

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)
3300200	High Island Lake outlet	NW $\frac{1}{4}$ NW $\frac{1}{4}$	33	114N	28W	13.1	16.9	19.9	13.1	16.9	19.9	7.66	3.3
3307600	Judicial Ditch No. 12 to High Island Creek (County Ditch No. 8) above mouth	SE $\frac{1}{4}$ SE $\frac{1}{4}$	02	113N	28W	6.96	0.0	0.6	6.96	0.0	0.6	4.89	4.1
3307501	High Island Creek (County Ditch No. 8) above gaging station near Arlington: no station number assigned	NW $\frac{1}{4}$ SW $\frac{1}{4}$	04	113N	27W	10.7	0.9	7.8	161	2.3	3.9	47.9	2.2
3307500	High Island Creek above High Island Ditch No. 2	SE $\frac{1}{4}$ SE $\frac{1}{4}$	04	113N	27W	3.20	0.0	0.2	164	2.3	3.9	49.5	2.1
3307700	High Island Ditch No. 2 to High Island Creek above mouth	SE $\frac{1}{4}$ SE $\frac{1}{4}$	04	113N	27W	16.4	3.7	10.5	16.4	3.7	10.5	12.6	3.0
3309001	High Island Creek above outfall from sewage treatment plant for Arlington	NE $\frac{1}{4}$ NW $\frac{1}{4}$	15	113N	27W	2.02	0.0	1.3	182	2.4	4.4	51.4	2.1
3309000	High Island Creek above County Ditch No. 26	SE $\frac{1}{4}$ NW $\frac{1}{4}$	18	113N	27W	7.30	0.0	0.1	190	2.3	4.3	57.1	2.1
3309800	County Ditch No. 26 to High Island Creek above mouth	SE $\frac{1}{4}$ NW $\frac{1}{4}$	18	113N	26W	8.63	11.6	13.6	8.63	11.6	13.6	6.82	6.2
3309300	High Island Ditch No. 5 to Buffalo Creek (County Ditch No. 59) above mouth	NW $\frac{1}{4}$ SE $\frac{1}{4}$	27	113N	27W	7.82	0.0	0.1	7.82	0.0	0.1	7.44	4.2
3309400	County Ditch No. 59 above High Island Ditch No. 5	NW $\frac{1}{4}$ SE $\frac{1}{4}$	27	113N	27W	7.07	0.0	0.0	7.07	0.0	0.0	4.76	7.1
3309201	Buffalo Creek (County Ditch No. 59) above gaging station near New Rome: no station number assigned	NW $\frac{1}{4}$ SW $\frac{1}{4}$	26	113N	27W	0.35	0.0	0.0	15.2	0.0	0.1	7.84	4.4
3309200	Buffalo Creek to High Island Creek above mouth	SE $\frac{1}{4}$ NE $\frac{1}{4}$	27	113N	26W	12.9	0.0	0.1	28.2	0.0	0.1	17.5	13.6
3309101	High Island Creek above gaging station near Henderson: station number is 05327000	NE $\frac{1}{4}$ NW $\frac{1}{4}$	26	113N	26W	11.4	0.0	0.2	238	2.3	3.9	67.0	3.5

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)
3309100	High Island Creek to Minnesota River above mouth	NE $\frac{1}{4}$ NW $\frac{1}{4}$	24	113N	26W	1.69	0.0	8.7	239.	2.2	3.9	68.5	4.0
3308700	Minnesota River above unnamed tributary (subbasin 3308400)	NW $\frac{1}{4}$ SE $\frac{1}{4}$	05	113N	25W	15.4	0.3	1.1	16,000	2.5	4.9	380	1.2
3308400	Unnamed tributary to Minnesota River above mouth	NW $\frac{1}{4}$ SE $\frac{1}{4}$	05	113N	25W	9.74	0.0	0.7	9.74	0.0	0.7	7.33	41.4
3308801	Minnesota River above gaging station near Blakeley: no station number assigned	SW $\frac{1}{4}$ SE $\frac{1}{4}$	04	113N	25W	3.87	1.2	1.3	16,000	2.5	4.9	381	1.2
3308800	Minnesota River above Robert Creek (outfall from sewage treatment plant for Belle Plaine)	NE $\frac{1}{4}$ NE $\frac{1}{4}$	02	113N	25W	2.49	1.1	3.2	16,000	2.5	4.9	384	1.2
3314000	Robert Creek (outfall from sewage treatment plant for Belle Plaine) to Minnesota River above mouth	NE $\frac{1}{4}$ NE $\frac{1}{4}$	02	113N	25W	13.9	0.2	3.1	13.9	0.2	3.1	10.2	30.0
3308900	Minnesota River above Bevens Creek	SE $\frac{1}{4}$ SW $\frac{1}{4}$	11	114N	24W	30.7	1.4	3.8	16100.	2.4	4.9	394.	1.1
3307800	Unnamed tributary to Mud Lake	NE $\frac{1}{4}$ NW $\frac{1}{4}$	19	114N	26W	14.8	1.1	8.1	14.8	1.1	8.1	8.77	1.8
3308100	Bevens Creek above Judicial Ditch No. 3	NW $\frac{1}{4}$ SW $\frac{1}{4}$	02	114N	26W	15.0	13.8	18.7	29.8	7.5	13.4	15.5	1.2
3307901	Judicial Ditch No. 3A above outfall from sewage treatment plant for Hamburg	SE $\frac{1}{4}$ SE $\frac{1}{4}$	33	115N	26W	1.13	0.0	0.0	1.13	0.0	0.0	2.54	8.4
3307900	Judicial Ditch No. 3 to Bevens Creek above mouth	NW $\frac{1}{4}$ SW $\frac{1}{4}$	02	114N	26W	8.58	0.0	0.3	9.71	0.0	0.2	5.76	3.9
3308000	Bevens Creek above County Ditch No. 4A (County Ditch No. 5)	SW $\frac{1}{4}$ SE $\frac{1}{4}$	30	115N	25W	5.40	0.0	0.2	44.9	5.0	9.0	19.0	1.7
3300101	Outlet creek from Brand Lake above outfall from sewage treatment plant for Norwood	NW $\frac{1}{4}$ SE $\frac{1}{4}$	14	115N	26W	2.47	4.9	9.0	2.47	4.9	9.0	2.58	16.6
3300100	County Ditch No. 4A (County Ditch No. 5) to Bevens Creek above mouth	SW $\frac{1}{4}$ SE $\frac{1}{4}$	30	115N	25W	14.8	3.1	8.9	17.3	3.3	8.9	6.28	5.9
3308200	Unnamed tributary to Silver Creek above mouth	NW $\frac{1}{4}$ SE $\frac{1}{4}$	12	114N	25W	14.1	1.1	3.1	14.1	1.1	3.1	9.81	9.5

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)
3308300	Silver Creek above unnamed tributary (subbasin 3308200)	NW $\frac{1}{4}$ SE $\frac{1}{4}$	12	114N	25W	12.0	0.5	4.0	12.0	0.5	4.0	10.2	6.8
3310200	Silver Creek to Bevens Creek above mouth	SE $\frac{1}{4}$ NW $\frac{1}{4}$	03	114N	24W	13.5	0.0	2.0	39.6	0.5	3.0	17.5	11.8
3310301	Bevens Creek above gaging station at East Union: station number is 05329900	SW $\frac{1}{4}$ NW $\frac{1}{4}$	02	114N	24W	25.9	0.8	1.8	128	2.5	5.6	36.7	5.8
3310309	Noncontributing area to subbasin 3310300					1.44	4.3	5.0	1.44	4.3	5.0	--	--
3310300	Bevens Creek to Minnesota River above mouth	SE $\frac{1}{4}$ SW $\frac{1}{4}$	11	114N	24W	2.84	1.5	3.3	132	2.5	5.6	38.8	7.4
3314502	Minnesota River above gaging station near Jordan: station number is 05330000	NW $\frac{1}{4}$ SW $\frac{1}{4}$	07	114N	23W	3.27	3.8	5.2	16,200	2.4	4.9	396	1.1
3314501	Minnesota River above gaging station near Carver: station number is 05330000	NE $\frac{1}{4}$ SW $\frac{1}{4}$	31	115N	23W	4.85	3.9	11.4	16,200	2.4	4.9	399	1.1
3314509	Noncontributing area to subbasin 3314500					0.60	0.0	0.0	0.60	0.0	0.0	--	--
3314500	Minnesota River above Sand Creek	SE $\frac{1}{4}$ SW $\frac{1}{4}$	20	115N	23W	2.52	6.3	16.8	16,200	2.4	4.9	402	1.1
3302100	Unnamed tributary to Cody Lake	NE $\frac{1}{4}$ SE $\frac{1}{4}$	32	112N	22W	13.7	1.9	6.6	13.7	1.9	6.6	7.24	7.2
3302000	Phelps Lake outlet	NW $\frac{1}{4}$ NE $\frac{1}{4}$	06	111N	22W	9.39	10.1	20.2	23.1	5.2	12.2	9.09	5.2
3301904	Unnamed tributary above gaging station near Montgomery: station number is 05330150	NE $\frac{1}{4}$ NE $\frac{1}{4}$	18	111N	22W	0.35	0.0	0.0	0.35	0.0	0.0	0.82	75.3
3301903	County Ditch No. 18 above gaging station near Montgomery: station number is 05330200	NE $\frac{1}{4}$ NW $\frac{1}{4}$	13	111N	23W	3.18	0.1	17.4	3.18	0.1	17.4	2.54	13.8
3302400	Lake Pepin outlet	SE $\frac{1}{4}$ NE $\frac{1}{4}$	33	112N	23W	7.97	9.1	14.0	7.97	9.1	14.0	5.83	3.1
3301902	Outlet creek from Lake Pepin above outfall from sewage treatment plant for Montgomery	NE $\frac{1}{4}$ SE $\frac{1}{4}$	33	112N	23W	8.30	0.0	1.0	16.3	4.5	7.4	6.13	2.9

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

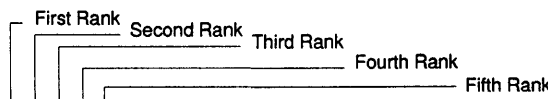
Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin					
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)	
13		County Ditch 30 above unnamed tributary to Lake Sanborn	NW ¹ / ₄ NE ¹ / ₄	35	112N	23W	4.37	1.9	15.1	20.6	3.9	9.0	8.28	2.7
	County Ditch No. 30 to Lake Sanborn	NW ¹ / ₄ NE ¹ / ₄	35	112N	23W	2.40	12.2	56.4	49.6	4.7	13.2	13.6	2.7	
	Sand Creek above gaging station near New Prague: station number is 05330300	NE ¹ / ₄ NW ¹ / ₄	01	112N	23W	12.6	4.8	9.5	62.2	4.7	12.5	21.0	2.3	
	Sand Creek above unnamed tributary (subbasin 3301700)	NE ¹ / ₄ SW ¹ / ₄	23	113N	23W	4.24	1.2	5.2	66.4	4.5	12.0	26.1	4.3	
	Unnamed tributary to Sand Creek above mouth	NE ¹ / ₄ SW ¹ / ₄	23	113N	23W	14.4	0.1	6.5	14.4	0.1	6.5	9.79	10.6	
	Outlet Creek from Cedar Lake to Sand Creek above mouth	SE ¹ / ₄ SE ¹ / ₄	11	113N	23W	5.40	24.7	31.0	5.40	24.7	31.0	4.05	7.9	
	Sand Creek above Raven Stream	SW ¹ / ₄ NW ¹ / ₄	03	113N	23W	7.23	6.2	10.4	93.5	5.1	12.1	35.0	5.4	
	County Ditch No. 3 to County Ditch No. 10 above mouth	NE ¹ / ₄ NE ¹ / ₄	22	113N	24W	10.9	0.4	8.1	10.9	0.4	8.1	6.66	7.3	
	County Ditch No. 10 to West Branch Raven Stream above mouth	SE ¹ / ₄ NW ¹ / ₄	24	113N	24W	6.18	0.0	2.6	17.1	0.2	6.1	8.58	7.2	
	West Branch Raven Stream above County Ditch No. 10	SE ¹ / ₄ NW ¹ / ₄	24	113N	24W	14.8	0.1	4.2	14.8	0.1	4.2	10.6	10.7	
	West Branch Raven Stream to Raven Stream above mouth	SW ¹ / ₄ SE ¹ / ₄	17	113N	23W	5.13	0.0	2.4	37.0	0.2	4.9	12.2	6.2	
	County Ditch No. 62 above outfall from sewage treatment plant for New Prague	SE ¹ / ₄ NE ¹ / ₄	34	113N	23W	9.04	0.1	2.4	9.04	0.1	2.4	5.70	16.0	
	Unnamed tributary to East Branch Raven Stream above mouth	SW ¹ / ₄ SE ¹ / ₄	28	113N	23W	0.84	0.0	0.6	9.88	0.1	2.3	7.05	12.9	

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)
	<div><div>First Rank</div><div>Second Rank</div><div>Third Rank</div><div>Fourth Rank</div><div>Fifth Rank</div></div>												
3302601	East Branch Raven Stream above gaging station near New Prague: station number is 05330550	NW ¹ / ₄ NW ¹ / ₄	28	113N	23W	12.3	1.7	8.5	22.2	1.0	5.7	10.5	10.5
3302600	East Branch Raven Stream to Raven Stream above mouth	SW ¹ / ₄ SE ¹ / ₄	17	113N	23W	0.76	0.1	0.5	23.0	0.9	5.5	12.1	10.0
3313601	Raven Stream above gaging station near St. Benedict: no station number assigned	NE ¹ / ₄ NW ¹ / ₄	16	113N	23W	3.76	0.0	1.6	63.7	0.4	4.9	13.4	5.8
3313600	Raven Stream to Sand Creek above mouth	SW ¹ / ₄ NW ¹ / ₄	03	113N	23W	2.43	0.2	0.5	66.2	0.4	4.7	16.8	6.3
3302200	Porter Creek above outlet creek from Cynthia Lake	NW ¹ / ₄ SE ¹ / ₄	05	113N	22W	36.0	0.6	6.9	36.0	0.6	6.9	16.1	11.0
3312800	Unnamed tributary above subbasin 3312700	NE ¹ / ₄ SW ¹ / ₄	07	113N	21W	4.69	0.5	3.7	4.69	0.5	3.7	5.30	26.1
3312700	Outlet creek from Cynthia Lake to Porter Creek above mouth	NW ¹ / ₄ SE ¹ / ₄	05	113N	22W	16.1	7.0	15.2	20.8	5.5	12.6	13.4	8.8
3313301	Porter Creek above gaging station near Jordan: no station number assigned	NW ¹ / ₄ NW ¹ / ₄	35	114N	23W	3.59	0.0	0.1	60.4	2.2	8.5	23.1	7.5
3313300	Porter Creek to Sand Creek above mouth	NE ¹ / ₄ SW ¹ / ₄	33	114N	23W	2.93	0.0	0.8	63.3	2.1	8.1	26.0	7.3
3313702	Unnamed tributary above gaging station near Jordan: station number is 05330600	NW ¹ / ₄ NE ¹ / ₄	05	113N	23W	2.76	0.0	0.7	2.76	0.0	0.7	2.03	17.1
3313701	Sand Creek above gaging station at Jordan: no station number assigned	NE ¹ / ₄ NW ¹ / ₄	19	114N	23W	8.81	0.5	2.8	234	2.8	8.5	41.4	6.5
3313700	Sand Creek above unnamed tributary (subbasin 3313800)	SE ¹ / ₄ SW ¹ / ₄	18	114N	23W	0.01	0.0	0.0	234	2.8	8.5	41.7	6.5
3313800	Unnamed tributary to Sand Creek above mouth	SE ¹ / ₄ SW ¹ / ₄	18	114N	23W	10.2	0.2	7.6	10.2	0.2	7.6	9.12	30.7
3313100	Unnamed tributary to Sand Creek above mouth	NW ¹ / ₄ NW ¹ / ₄	33	115N	23W	15.8	2.8	8.5	15.8	2.8	8.5	8.43	32.0

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)

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3311101	Sand Creek above gaging station near Jordan: no station number assigned	SW ¹ / ₄ SW ¹ / ₄	29	115N	23W	9.98	3.2	8.4	270	2.7	8.4	48.1	8.5
3311100	Sand Creek to Minnesota River above mouth	SE ¹ / ₄ SW ¹ / ₄	20	115N	23W	0.94	11.9	12.9	271	2.7	8.5	50.0	8.6
3313200	Minnesota River above Carver Creek	NW ¹ / ₄ NW ¹ / ₄	20	115N	23W	0.29	0.0	1.3	16,500	2.5	4.9	403	1.1
3310600	Unnamed tributary to Lake Waconia	SW ¹ / ₄ NE ¹ / ₄	02	116N	25W	9.95	7.7	23.4	9.95	7.7	23.4	7.08	2.5
3310700	Lake Waconia outlet	SW ¹ / ₄ NE ¹ / ₄	14	116N	25W	7.01	68.5	71.1	17.0	32.8	43.1	9.56	1.9
3310800	Outlet creek from Reitz Lake to unnamed tributary (subbasin 3310500) above mouth	SE ¹ / ₄ SE ¹ / ₄	25	116N	25W	7.11	1.9	8.8	7.11	1.9	8.8	5.67	9.8
3310500	Unnamed tributary to Carver Creek above mouth	SE ¹ / ₄ NE ¹ / ₄	36	116N	25W	8.88	2.1	6.8	33.0	17.9	25.9	16.2	3.5
3310401	Outlet creek from Meuwissen Lake above outfall from sewage treatment plant for Cologne	NE ¹ / ₄ NE ¹ / ₄	14	115N	25W	2.69	1.4	3.4	2.69	1.4	3.4	2.44	15.8
3310400	Carver Creek above unnamed tributary (subbasin 3310500)	SE ¹ / ₄ NE ¹ / ₄	36	116N	25W	28.3	5.2	12.8	31.0	4.9	12.0	13.2	5.6
3310908	Noncontributing area to subbasin 3310901					0.74	1.4	1.8	0.74	1.4	1.8	--	--
3310901	Carver Creek above gaging station near Carver: station number is 05330650	SW ¹ / ₄ SE ¹ / ₄	24	115N	24W	15.6	1.5	5.2	80.3	9.5	16.3	30.8	7.7
3310909	Noncontributing area to subbasin 3310900					1.10	0.0	0.8	1.10	0.0	0.8	--	--
3310900	Carver Creek to Minnesota River above mouth	NW ¹ / ₄ NW ¹ / ₄	20	115N	23W	0.86	0.2	0.2	82.3	9.3	15.9	32.5	8.9
3311003	Unnamed tributary (above gaging station near mouth at Carver) to Minnesota River above mouth: no station number assigned	NE ¹ / ₄ NE ¹ / ₄	19	115N	23W	1.52	0.0	0.5	1.52	0.0	0.5	1.98	158.5

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

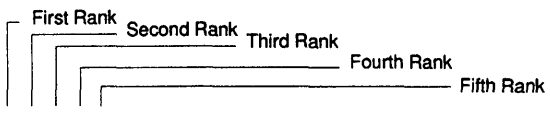
Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)
													
3311002	Unnamed tributary (above gaging station near mouth at Carver) to Minnesota River above mouth: no station number assigned	NE $\frac{1}{4}$ SW $\frac{1}{4}$	17	115N	23W	1.51	5.3	8.3	1.51	5.3	8.3	2.10	150.6
3311001	Minnesota River above gaging station near Chaska: no station number assigned	SE $\frac{1}{4}$ SW $\frac{1}{4}$	09	115N	23W	0.37	0.0	0.0	16,600	2.5	5.0	406	1.1
3311000	Minnesota River above Chaska Creek	NW $\frac{1}{4}$ SW $\frac{1}{4}$	09	115N	23W	0.13	0.0	0.2	16,600	2.5	5.0	406	1.1
3311200	Unnamed tributary to Chaska Creek above mouth	SW $\frac{1}{4}$ NE $\frac{1}{4}$	06	115N	23W	9.87	1.3	8.7	9.87	1.3	8.7	7.54	7.6
3311301	Chaska Creek above gaging station at Chaska: station number is 05330700	NE $\frac{1}{4}$ NE $\frac{1}{4}$	08	115N	23W	4.98	0.3	8.3	14.8	1.0	8.5	9.56	21.0
3311300	Chaska Creek (above gaging station at mouth near Chaska) to Minnesota River above mouth: no station number assigned	NW $\frac{1}{4}$ SW $\frac{1}{4}$	09	115N	23W	0.65	0.0	0.4	15.50	0.9	8.2	10.6	26.9
3311408	Minnesota River above outfall from sewage treatment plant for Chaska	NW $\frac{1}{4}$ SE $\frac{1}{4}$	09	115N	23W	0.26	0.0	0.0	16,600	2.5	5.0	406	1.1
3311410	Outlet creek from Gifford Lake (above gaging station at mouth near Chaska) to Minnesota River above mouth: no station number assigned	NE $\frac{1}{4}$ SE $\frac{1}{4}$	09	115N	23W	4.60	1.4	6.9	4.60	1.4	6.9	5.73	46.2
3311501	Unnamed tributary above gaging station near Chaska: no station number assigned	SW $\frac{1}{4}$ SW $\frac{1}{4}$	04	115N	23W	11.7	5.2	9.1	11.7	5.2	9.1	7.88	37.5
3311500	Unnamed tributary to Minnesota River above mouth	SE $\frac{1}{4}$ SE $\frac{1}{4}$	04	115N	23W	0.46	4.7	4.7	12.2	5.1	9.0	8.89	37.0
3311406	Unnamed tributary (above gaging station near mouth near Chaska) to Minnesota River above mouth: no station number assigned	NE $\frac{1}{4}$ SW $\frac{1}{4}$	03	115N	23W	0.13	0.0	3.2	0.13	0.0	3.2	0.85	93.1

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

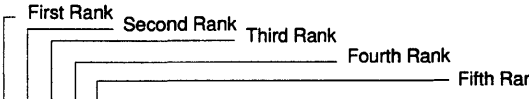
Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Town-ship	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)
													
3311407	Unnamed tributary (above gaging station near mouth near Chaska) to Minnesota River above mouth: no station number assigned	NW ¹ / ₄ SW ¹ / ₄	03	115N	23W	0.13	0.0	0.0	0.13	0.0	0.0	0.99	89.1
3311405	Unnamed tributary (above gaging station at mouth near Shakopee) to Minnesota River above mouth: no station number assigned	SW ¹ / ₄ NW ¹ / ₄	02	115N	23W	0.34	0.0	10.4	0.34	0.0	10.4	1.36	13.2
3311409	Noncontributing area to subbasin 3311411					0.95	0.5	0.6	0.95	0.5	0.6	--	--
3311411	Outlet creek from Nyssens Lake (above gaging station at mouth near Shakopee) to Minnesota River above mouth: no station number assigned	NW ¹ / ₄ SE ¹ / ₄	02	115N	23W	1.18	8.0	23.1	2.14	4.6	13.1	2.12	3.3
3311404	Unnamed tributary (above gaging station at mouth near Shakopee) to Minnesota River above mouth: no station number assigned	SE ¹ / ₄ NE ¹ / ₄	02	115N	23W	2.08	0.0	4.6	2.08	0.0	4.6	3.07	65.3
3311403	Unnamed tributary (above gaging station near mouth near Shakopee) to Minnesota River above mouth: no station number assigned	NW ¹ / ₄ NE ¹ / ₄	06	115N	22W	0.68	0.5	0.5	0.68	0.5	0.5	1.42	105.3
3311402	Unnamed tributary (above gaging station near mouth near Shakopee) to Minnesota River above mouth: no station number assigned	SW ¹ / ₄ SW ¹ / ₄	32	116N	22W	13.5	6.1	7.7	13.5	6.1	7.7	11.0	24.1
3311401	Minnesota River above gaging station near Shakopee: no station number assigned	NE ¹ / ₄ NW ¹ / ₄	05	115N	22W	3.31	0.2	0.2	16,600	2.5	5.0	413	1.1
3311601	Bluff Creek above gaging station near Shakopee: no station number assigned	NW ¹ / ₄ SE ¹ / ₄	32	116N	22W	9.22	5.2	14.4	9.22	5.2	14.4	10.1	30.5
3311600	Bluff Creek to Minnesota River above mouth	SE ¹ / ₄ SE ¹ / ₄	32	116N	22W	0.03	0.0	0.0	9.24	5.2	14.3	10.3	29.5

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

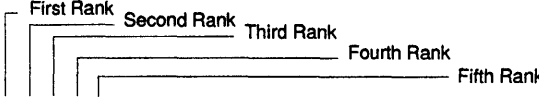
Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)
													
3311400	Minnesota River above outlet creek from Grass Lake	SE $\frac{1}{4}$ SE $\frac{1}{4}$	32	116N	22W	0.17	0.0	0.0	16,700	2.5	5.0	414	1.1
3311702	Riley Creek above gaging station at Eden Prairie: station number is 05330750	NE $\frac{1}{4}$ SE $\frac{1}{4}$	29	116N	22W	10.2	10.2	15.8	10.2	10.2	15.8	10.6	21.7
3311701	Riley Creek (Grass Lake outlet) above gaging station near Shakopee: no station number assigned	SE $\frac{1}{4}$ SE $\frac{1}{4}$	32	116N	22W	2.88	17.4	27.9	13.1	11.8	18.4	12.2	26.9
3311700	Outlet creek from Grass Lake to Minnesota River above mouth	SE $\frac{1}{4}$ SE $\frac{1}{4}$	32	116N	22W	0.00	0.0	0.0	13.1	11.8	18.4	12.3	27.3
3311901	Unnamed tributary (above gaging station at mouth near Shakopee) to Minnesota River above mouth: no station number assigned	NW $\frac{1}{4}$ NW $\frac{1}{4}$	03	115N	22W	0.32	0.0	2.6	0.32	0.0	2.6	1.19	52.0
3311902	Minnesota River above outfall from Blue Lake sewage treatment plant	NE $\frac{1}{4}$ NW $\frac{1}{4}$	03	115N	22W	1.05	0.0	3.2	16,700	2.5	5.0	415	1.0
3311900	Minnesota River above Purgatory Creek	SE $\frac{1}{4}$ SW $\frac{1}{4}$	36	116N	22W	0.87	0.2	0.6	16,700	2.5	5.0	418	1.0
3311801	Purgatory Creek above gaging station at Eden Prairie: station number is 05330800	NW $\frac{1}{4}$ SE $\frac{1}{4}$	26	116N	22W	27.2	5.0	13.2	27.2	5.0	13.2	14.2	8.2
3311800	Purgatory Creek to Minnesota River above mouth	SE $\frac{1}{4}$ SW $\frac{1}{4}$	36	116N	22W	3.17	5.4	8.4	30.4	5.0	12.7	16.8	11.7
3313000	Unnamed tributary to Spring Lake	NW $\frac{1}{4}$ SE $\frac{1}{4}$	08	114N	22W	9.85	1.8	14.2	9.85	1.8	14.2	6.43	7.2
3312900	Spring Lake outlet	SE $\frac{1}{4}$ SE $\frac{1}{4}$	04	114N	22W	9.86	12.5	23.2	19.7	7.2	18.7	7.91	4.9
3312205	Prior Lake outlet	SW $\frac{1}{4}$ NW $\frac{1}{4}$	35	115N	22W	10.1	22.6	28.3	29.8	12.4	21.9	10.6	4.2
3312204	Fisher Lake outlet (above gaging station near mouth near Savage) to Minnesota River above mouth: no station number assigned	NW $\frac{1}{4}$ SW $\frac{1}{4}$	06	115N	21W	19.9	6.2	12.5	49.6	9.9	18.2	20.3	15.1
3312101	Unnamed tributary above gaging station near Savage: no station number assigned	SW $\frac{1}{4}$ NW $\frac{1}{4}$	18	115N	21W	0.18	0.0	0.0	0.18	0.0	0.0	0.74	331.1

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

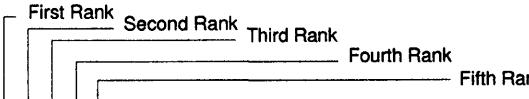
Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)
61													
	3312100 Eagle Creek (above gaging station at mouth near Savage) to Minnesota River above mouth: no station number assigned	SE $\frac{1}{4}$ NE $\frac{1}{4}$	07	115N	21W	3.65	7.4	20.6	3.83	7.0	19.7	2.66	21.5
	3312202 Minnesota River above gaging station near Savage: no station number assigned	NE $\frac{1}{4}$ NE $\frac{1}{4}$	08	115N	21W	3.17	0.7	2.0	16,800	2.5	5.1	421	1.0
	3312209 Noncontributing area to subbasin 3312201					1.10	6.2	10.5	1.10	6.2	10.5	--	--
	3312201 Unnamed tributary (above gaging station at mouth near Savage) to Minnesota River above mouth: no station number assigned	NE $\frac{1}{4}$ NE $\frac{1}{4}$	08	115N	21W	3.18	0.4	7.0	4.28	1.9	7.9	2.86	67.1
	3312203 Unnamed tributary above outfall from sewage treatment plant for Savage	SW $\frac{1}{4}$ SE $\frac{1}{4}$	09	115N	21W	0.38	0.0	0.0	0.38	0.0	0.0	1.06	130.
	3312200 Minnesota River above Credit Creek	NE $\frac{1}{4}$ NW $\frac{1}{4}$	31	27N	24W	1.55	0.7	3.1	16,800	2.5	5.1	423	1.0
	3312600 Credit River above unnamed tributary (subbasin 3312500)	SE $\frac{1}{4}$ NW $\frac{1}{4}$	09	114N	21W	17.0	1.3	8.9	17.0	1.3	8.9	9.16	14.2
	3312500 Unnamed tributary to Credit River above mouth	SE $\frac{1}{4}$ NW $\frac{1}{4}$	09	114N	21W	6.01	10.0	17.5	6.01	10.0	17.5	5.20	26.4
	3312301 Credit River above gaging station at Savage: no station number assigned	SE $\frac{1}{4}$ SW $\frac{1}{4}$	31	27N	24W	24.1	3.6	10.9	47.1	3.6	11.0	20.5	13.2
	3312300 Credit River to Minnesota River above mouth	NE $\frac{1}{4}$ NW $\frac{1}{4}$	31	27N	24W	0.16	0.0	0.0	47.3	3.6	11.0	21.1	13.5
	3312401 Storm water outlet from Crystal and Keller Lakes	NW $\frac{1}{4}$ SE $\frac{1}{4}$	25	115N	21W	6.85	11.1	11.2	6.85	11.1	11.2	4.17	11.0
	3312400 Minnesota River above Ninemile Creek lower outlet	SE $\frac{1}{4}$ NE $\frac{1}{4}$	28	27N	24W	10.1	0.6	1.6	16,800	2.5	5.1	426	1.0
	3314100 South Fork Ninemile Creek to Ninemile Creek above mouth	SE $\frac{1}{4}$ NE $\frac{1}{4}$	17	116N	21W	18.3	10.0	14.0	18.3	10.0	14.0	10.0	11.5
	3314200 Ninemile Creek above South Fork Ninemile Creek	SE $\frac{1}{4}$ NE $\frac{1}{4}$	17	116N	21W	13.8	1.8	4.4	13.8	1.8	4.4	9.10	13.3

Table 1.—Physical characteristic data for the Lower Minnesota River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of total area)	Storage area (percent of total area)	Main channel length (miles)	Main channel slope (foot per mile)
3312001	Ninemile Creek above gaging station at Bloomington: station number is 05330900	SE $\frac{1}{4}$ NW $\frac{1}{4}$	21	27N	24W	13.2	2.5	9.9	45.4	5.3	9.9	16.4	7.7
3312000	Ninemile Creek upper outlet (above gaging station at mouth near Savage) to Minnesota River above mouth: no station number	SE $\frac{1}{4}$ SW $\frac{1}{4}$	29	27N	24W	4.42	2.2	6.5	49.8	5.0	9.6	18.3	11.0
3314400	Black Dog Lake outlet (above gaging station at mouth in Burnsville) to Minnesota River above mouth: no station number assigned	SW $\frac{1}{4}$ NW $\frac{1}{4}$	27	27N	24W	9.68	5.4	6.6	9.68	5.4	6.6	7.10	52.6
3314303	Minnesota River above gaging station in Bloomington: station number is 05330910	NW $\frac{1}{4}$ SE $\frac{1}{4}$	13	27N	24W	5.58	4.7	6.5	16,900	2.5	5.1	429	1.0
3314302	Unnamed tributary (above gaging station near mouth in Burnsville) to Minnesota River above mouth: station number is 05330915	SE $\frac{1}{4}$ NW $\frac{1}{4}$	18	27N	23W	0.99	0.4	2.0	0.99	0.4	2.0	2.65	82.5
3314304	Minnesota River above outfall from sewage treatment plant for Seneca	NE $\frac{1}{4}$ NW $\frac{1}{4}$	18	27N	23W	23.2	4.8	7.4	16,900	2.5	5.1	430	1.0
3314301	Minnesota River above gaging station at Fort Snelling State Park: station number is 05330920	NW $\frac{1}{4}$ SE $\frac{1}{4}$	32	28N	23W	11.8	10.3	20.1	16,900	2.5	5.1	433	1.0
3314300	Minnesota River above mouth	NE $\frac{1}{4}$ SE $\frac{1}{4}$	22	28N	23W	18.9	4.9	10.3	16,900	2.6	5.1	436	1.0